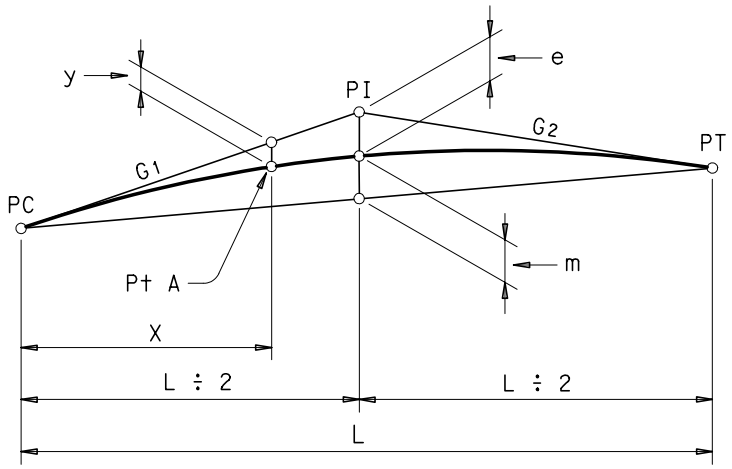

L = length of Vertical parabolic curve PC-PT measured along the horizontal projection (Station change)

PI = point of intersection

PC = point of curvature

PT = point of tangency

m = mid-ordinate (m = e)

G_1 & G_2 = tangent grades ($G_1 \neq G_2$)

$$m = e = (L) \left(\frac{G_1 - G_2}{8}\right)$$

$$y = F X^2 = \frac{X^2 m}{(L \div 2)^2}$$

$$F = \frac{m}{(L \div 2)^2} = \frac{(G_1 - G_2) L}{8 (L \div 2)^2} = \frac{G_1 - G_2}{2 L}$$

Elevation at Pt A = PC elev + (G_1 X) - (F X^2)

Fig. 5-8